- 23 -

CLAIMS

1. A method for planning a radiocommunications
network, comprising:

- computing cell coverage, to indicate a region
5 around a radio base station (RBS) where a radioelectric
signal radiating out from the radio base station (RBS)
copes with given requirements;

wherein computing cell coverage comprises:

- dividing a region around said radio base station
10 (RBS) into a number of first areas (LEP);

- dividing at least some of said first areas (LEP)
into a number of second areas (SEP);

- for at least some target second areas of said
second areas (SEP), computing respective quantities
15 indicative of the coverage within said target second
areas (SEP), each quantity being computed for the
respective target second area (SEP) as a function of
data describing the environment between said radio base
station (RBS) and said target second area (SEP) along a
20 propagation path of a radioelectric signal radiating out
from said radio base station (RBS) and passing through
said target second area (SEP);

characterized in that each quantity is computed for
the respective target second area (SEP) as a function of
25 data describing the environment within at least some
second areas (SEP) close to at least one of said radio
base station (RBS) and said target second area (SEP)
along the radioelectric signal propagation path, and as a
function of data describing the environment within at
30 least some first areas (LEP) along the remaining stretch
of the radioelectric signal propagation path.

2. A method as claimed in claim 1, wherein
computing a second quantity for a target second area
(SEP) includes:

35 - checking availability of data describing the

- 24 -

environment within at least some second areas (SEP)
close to said radio base station (RBS) and said target
second area (SEP);

   - forming a mixed resolution environment profile
5   describing the environment between said radio base
station (RBS) and said target second area (SEP) along
said radioelectric signal propagation path, said mixed
resolution environment profile describing the
environment within at least some second areas (SEP)
10 close to at least one of said radio base station (RBS)
and said target second area (SEP) depending on
environment descriptive data availability, and within at
least some first areas (LEP) along the remaining stretch
of the radioelectric signal propagation path; and

15   - computing said quantity on the basis of said
mixed resolution environment profile.

     3. A method as claimed in claim 2, wherein forming
a mixed resolution environment profile comprises:

     - identifying obstacles encountered by said
20 radioelectric signal within at least some first areas
(LEP) along the propagation path from said radio base
station (RBS) to said target second area (SEP);

     - forming the part of the mixed resolution
environment profile describing the environment within at
25 least some first areas (LEP) along the remaining stretch
of the radioelectric signal propagation path so that
said part describes the obstacles identified within said
first areas (LEP).

     4. A method as claimed in claim 3, wherein forming
30 the part of the mixed resolution environment profile
describing the environment within at least some first
areas (LEP) along the remaining stretch of the
radioelectric signal propagation path so that said part
describes the obstacles identified within said first
35 areas (LEP) comprises:

- 25 -

- consolidating identified obstacles which are
spaced apart one from another of a distance lower than a
given distance; and

- forming the part of the mixed resolution
5   environment profile describing the environment within at
least some first areas (LEP) along the remaining stretch
of the radioelectric signal propagation path so that
said part describes said consolidated obstacles.

5. A method as claimed in claim 3 or 4, wherein
10   obstacles encountered by said radioelectric signal
within at least some first areas (LEP) along the
propagation path from said radio base station (RBS) to
said second area (SEP) are identified according to a
stretched string technique.

15   6. A method as claimed in any one of the foregoing
claims 2 to 5, wherein forming a mixed environment
profile comprises:

- forming a first end and a second end of said mixed
resolution environment profile describing the environment
20   within at least some second areas (SEP) close to said
radio base station (RBS) and said target second area
(SEP) depending on environment descriptive data
availability.

7. A method as claimed in any one of the foregoing
25   claims 2 to 6, wherein computing said quantity on the
basis of said mixed environment profile includes:

- identifying obstacles encountered by said
radioelectric signal along the propagation path from
said radio base station (RBS) to said target second area
30   (SEP) on the basis of said mixed resolution environment
profile; and

- computing said quantity on the basis of said
identified obstacles.

8. A method as claimed in claim 7, wherein said
35   obstacles are identified according to a stretched string

- 26 -

technique.

    9. A method as claimed in claim 7 or 8, wherein computing said quantity on the basis of said identified obstacles comprises:

5   - computing attenuation by diffraction on said identified obstacles of a radioelectric signal radiating out from said radio base station (RBS) along the propagation path to said second area (SEP),

    wherein computing attenuation by diffraction

10 comprises:

    - computing a first contribution due to orographic obstacles;

    - computing a second contribution due to buildings;

    - computing a third contribution due to vegetation;

15 and

    - computing said attenuation by diffraction as a weighted sum of said first, second and third contributions.

    10. A method as claimed in any one of the foregoing

20 claims, wherein the environment within second areas (SEP) close to said radio base station (RBS) and said target second area (SEP) along the radioelectric signal propagation path is described by using a first resolution and the environment within first areas (LEP)

25 along the remaining stretch of the radioelectric signal propagation path is described by using a second resolution lower than said first resolution.

    11. A method as claimed in any one of the foregoing claims, wherein said data describing the environment

30 within said second areas (SEP) close to said radio base station (RBS) and said second area (SEP) along the radioelectric signal propagation path include average ground altimetry, information as to the presence of a building, vegetation or nothing, and height of the

35 building or vegetation.

- 27 -

12. A method as claimed in any one of the foregoing claims, wherein said data describing the environment within said first areas (LEP) along said at least part of the remaining stretch of the radioelectric signal
5 propagation include average ground altimetry.

13. A method as claimed in any one of the foregoing claims, wherein a quantity for a respective second area (SEPB) occupied by a building is computed as a function of quantities computed for second areas (SEPA)
10 surrounding the second area (SEPB) occupied by the building.

14. A method as claimed in claim 13, wherein a quantity for a respective second area (SEPB) occupied by a building is computed as a weighted average of
15 quantities computed for second areas (SEPA) surrounding the second area (SEPB) occupied by the building.

15. A method as claimed in claim 14, wherein said quantities computed for second areas (SEPA) surrounding the second area (SEPB) occupied by the building are
20 weighted by using respective weights which are inversely proportional to the squared distance between the second area (SEPB) occupied by the building and the second areas (SEPA) surrounding the second area (SEPB) occupied by the building.

25 16. A processing system programmed to implement the method according to any one of the foregoing claims.

17. Computer program modules comprising computer program code means, said computer program modules being able, when loaded in a processing system, to implement
30 the method according to any one of the foregoing claims 1 to 15.